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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/795,961	02/04/97	FYSON	J 71442JRE

EXAMINER

A3M1/1128

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MCCARTHY, N
ART UNIT PAPER NUMBER

1308

DATE MAILED: 11/28/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

The drawings have been approved by the drafts person

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

—SEE OFFICE ACTION ON THE FOLLOWING PAGES—

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 3635219 A1 in view of Yan '063.

DE 3635219 (hereinafter "the German reference") discloses the oxidation of dilute aqueous solutions of thiosulphate with hydrogen peroxide catalyzed with a solution of molybdate. The instant claims differ from the German reference in reciting that the "catalyst is immobilized on a substrate therefor." The instant specification discloses that a disadvantage of the German reference is that while sulfur-containing species are reduced by the catalytic oxidation process, transition metal catalysts, e.g., molybdenum, are subsequently released into the environment as contaminants. The specification then states that this problem is overcome by immobilizing the transition metal catalysts onto a substrate therefor. Yan discloses a catalytic oxidation process for

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removing species including reduced sulfur species from waste water by contacting the waste water with an oxidizing agent in the presence of a transition metal, such as molybdenum or a compound thereof, supported on a support including ion-exchange resins and other porous resins that are inert under the hydrothermal conditions present in the oxidation process, note col. 6, lines 34+. Yan specifically discloses that use of such supported transition metal catalyst results in little of the metal catalyst from being leached from the surface of the support and remaining in the treated waste effluent, note col. 2, lines 0-30. It is thus submitted that it would have been obvious to the person having ordinary skill in the art, at the time that the invention was made, to have supported a transition metal catalyst as disclosed by the German reference onto a support as is taught by Yan in order to minimize discharge of toxic transition metals into the treated waste effluent. The German reference suggests that the process is useful to treat photographic effluents, and the instant claims directed to treatment of such effluents would thus have been obvious to the person having ordinary skill in the art. It is further submitted that the supports utilized in Yan are porous and would thus present a large surface area of catalyst to the effluent to be treated, as claimed in instant claim 7. It is submitted that addition of a basic agent would have been obvious in order to adjust pH to a level at which the process would proceed efficiently. It is noted that Yan, Example 1, discloses a pH of 8.4, which is within the pH range recited in claim 12. The sources of alkali claimed are conventional agents used for pH adjustments in waste water treatment applications and such would have been obvious in the process of the German reference as modified by Yan. The apparatus for contacting the photographic waste effluent with the

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supported catalyst as recited in claims 15-20 is submitted to be broadly readable on the packed bed as disclosed by Yan, col. 8, lines 51-60 as being an "effective and efficient contactor". Other contacting apparatuses would have been obvious to the person having ordinary skill in the art. Continuous flow, inlets, outlets, holding tank, and pumps, are all conventional equipment used to handle waste water being oxidatively treated in a continuous-flow manner. For the foregoing reasons, it is submitted that the claimed invention, at the time that it was made, would have been obvious to the person having ordinary skill in the art over the German reference in view of Yan '063.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil M. McCarthy whose telephone number is (703) 308-3842.

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nmn

November 24, 1997

Neil McCarthy
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PRIMARY EXAMINER
GROUP 1300